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INTELLIGENCE MEMORANDUM

QUARTERLY ESTIMATE OF THE PRODUCTION OF AIRCRAFT IN THE SINO-SOVIET BLOC JULY-SEPTEMBER 1956

CIA/RR IM-437

25 October 1956

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FOREWORD

This memorandum is the sixth in a series to be issued on a quarterly basis summarizing production of aircraft in the Sino-Soviet Bloc. The estimates presented are intended to supersede those contained in previous ORR publications and are issued to satisfy the requests of consumers for the most recent estimates of production of aircraft in the Bloc. Recently acquired reliable data on production of spare parts for US aircraft have been incorporated into the present estimates. In addition, official US Air Force estimates of airframe weights for Farmer and Flashlight aircraft have been revised again, this time in an upward direction. Changes in the present estimates from past estimates are the result of the inclusion of new data on spare parts, revisions of official estimates of airframe weights, and more recent intelligence information. No interagency coordination has been attempted, and no dissemination of this memorandum outside of CIA is planned.

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(ORR Project 33.1552)

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QUARTERLY ESTIMATE OF THE PRODUCTION OF AIRCRAFT IN THE SINO-SOVIET BLOC JULY-SEPTEMBER 1956*

1. Trends in Production.

In the third quarter of 1956, estimated production of aircraft by the Sino-Soviet Bloc increased about 5 percent over production in the previous quarter.** The increase continued to be mainly in the production of fighter aircraft in the USSR, where production of new models is still advancing along estimated production acceleration curves.*** Production in terms of airframe weight registered an even larger increase, somewhat less than 10 percent over production of the previous quarter. The larger increase in airframe weight reflects rising rates of production of Bear and Camel aircraft and the replacement of the Fresco (MIG-17) fighter by the heavier Farmer, by the Flashlight, and by an unidentified new fighter. Somewhat less than 60 percent of the aircraft produced during the third quarter of 1956 are believed to have been combat types.****

2. Production in the USSR.

The Soviet share of estimated total production of aircraft by the Sino-Soviet Bloc remained essentially unchanged during the third quarter of 1956.† In both the second and third quarters of 1956 the Soviet share was between 80 and 85 percent of total production by the

* The estimates and conclusions contained in this memorandum represent the best judgment of ORR as of 15 October 1956.

** Estimated production of aircraft in the Sino-Soviet Bloc from 1954 through the third quarter of 1956, by number, is given in Table 1, p. 6, below, and, by airframe weight, in Table 2, p. 7, below.

*** Estimated cumulative production of selected Soviet aircraft through the third quarter of 1956 is given in Table 3, p. 8, below.

**** For the purposes of this memorandum, combat types include bomber, fighter, and ground attack aircraft. Other aircraft such as helicopters and transports have uses under both combat and noncombat conditions.

† Estimated production of aircraft in the USSR from 1954 through the third quarter of 1956, by number, is given in Table 4, p. 9, below, and, by airframe weight, in Table 5, p. 10, below.

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Bloc. On the basis of airframe weight, almost 95 percent of production of all aircraft took place in the USSR, a slight increase over the second quarter of 1956. This figure continues to emphasize the fact that the other members of the Bloc produce relatively lighter aircraft. More than 85 percent of all the combat aircraft produced by the Bloc during the third quarter of 1956 is believed to have been produced in the USSR.

Recent intelligence information has resulted in several changes in previously published estimates of Soviet production of aircraft. As noted in the last memorandum of this series,* information which became available in late June 1956 indicated that a further reduction in estimated production of the Bison might be necessary. Analysis of this new material led to the conclusion that 35 Bisons had been produced by the end of June 1956 instead of the 56 previously reported. This reduction in the estimate of production of the Bison from previous estimates is strongly supported by the limited number of sightings of Bisons at the producing plant, which is located in Moscow. US Air Force estimates carry production of the Badger at Plant No. 64 in Voronezh, based upon photographs of these aircraft as they were being worked upon on the ramp in front of the plant. This memorandum carries this activity as a modification of the Badger rather than as production because, among other reasons, production of the Badger at Plant No. 64, added to the known production at Plants No. 1 in Kuybyshev and No. 22 in Kazan', would be inconsistently higher than fairly firm order-of-battle estimates of Soviet Badger strength.

As a result of the visit of General Twining to Plant No. 30 in Moscow, it has been established that the plant is engaged in some aspect of production of the Crate (Il-14), the conventional Soviet transport. Whether or not this activity is production of the Crate or a modification of the Coach (Il-12) to the Crate is not clear. Analysis of the information on Plant No. 30 supports the tentative conclusion that the activity is modification of the Coach to the Crate.

One new jet fighter which was carried in the previous estimate has been dropped from the estimate presented in this memorandum. Information has been received which indicates that what formerly

* CIA/RR IM-432, Quarterly Estimate of the Production of Aircraft in the Sino-Soviet Bloc, April-June 1956, 20 July 1956. SECRET/CIA INTERNAL USE ONLY.

appeared to be a new fighter in production at Plant No. 292 in Saratov was actually the Flashlight. On the basis of a second sighting at the plant airfield, this memorandum continues to carry production of a new fighter at Plant No. 168 in Rostov. Identification of this fighter is not firm, but limited information suggests that it may be the Faceplate, new jet fighter shown for the first time at the 1956 Aviation Day Airshow.

It is estimated that during the third quarter of 1956 Soviet production of military aircraft exceeded that of the US by about 20 percent.* In terms of airframe weight, Soviet and US production of military aircraft were roughly the same.

3. Production in the European Satellites and in Communist China.

In the third quarter of 1956 the European Satellites produced an estimated total of 330 aircraft, or about 14 percent of total production of all aircraft in the Sino-Soviet Bloc. It is estimated that 70 aircraft, all piston-engine trainers, were produced by Communist China during the third quarter of 1956, representing about 3 percent of estimated total production by the Bloc.** Czechoslovakia and Poland remain the largest producers among the Satellites, accounting for about 72 percent and 24 percent, respectively, or a combined total of about 96 percent of Satellite production of aircraft by number.

Aircraft sightings by the US Air Attaché to Czechoslovakia during July and August at the large Prague/Vodochody Fagot (MIG-15) jet fighter plant in Czechoslovakia indicate a decline in production. This plant may be phasing out production of the obsolete Fagot in favor of the more advanced Fresco jet fighter.

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* Production of military aircraft in the USSR is compared with that in the US from 1954 through the third quarter of 1956, by number, in Figure 1, following p. 14, and, by airframe weight, in Figure 2, following p. 14. For additional comparison, US military aircraft acceptances from 1954 through the third quarter of 1956, by number, are given in Table 6, p. 11, below, and, by airframe weight, in Table 7, p. 12, below.

** Estimated production of aircraft in the European Satellites and Communist China from 1954 through the third quarter of 1956, by number, is given in Table 8, p. 13, below, and, by airframe weight, in Table 9, p. 14, below.

Production of the Crate is proceeding slowly in Czechoslovakia and East Germany. Series production is expected to begin at the Czechoslovak Avia plant in the last quarter of 1956.

In an air display on 26 August 1956, Poland exhibited four Sm-1 (Soviet Hare, Mi-1) light helicopters. These aircraft are believed to have been the first units produced at the Lublin/Swidnik aircraft plant. Series production of this aircraft is anticipated in the light of European Satellite requirements for a utility helicopter.

An analysis of intelligence on Communist China indicates that a program of production of aircraft is under way. The construction of facilities for production of aircraft and the initiation of production of aircraft have been priority targets under the Chinese First Five Year Plan (1953-57). The program of Soviet aid has been geared to these objectives by providing technical assistance, training for Chinese personnel, and tooling and materials as required. New facilities for production of aircraft have been constructed and have been active in the assembly and repair of jet-fighter and conventional-trainer aircraft.

The Chinese Communist press announced on 29 September 1954 that the first successful flight of Chinese-made aircraft had taken place on 26 July 1954. It is believed that this release referred to the flight testing of a trial production group of conventional Yak-18 trainers. The Yak-18 is probably the most simply constructed airframe among Soviet aircraft. It is estimated that the first series-produced trainer was accepted in July 1955 and that as many as 205 trainers were produced through September 1956.

On 8 September 1956 the Chinese Communist press announced the successful production of a jet aircraft. This effort is believed to be the start of a program of production of jet aircraft. It is estimated that the Chinese Communists will perform final assembly from Soviet-produced parts on a series of 100 jet fighter aircraft, probably in the Fresco (MIG-17) class. This final assembly operation constitutes approximately 12 percent of the production effort on this aircraft and is a necessary step in the initiation of complete Chinese production. It is estimated that five jet aircraft will have been assembled through the third quarter of 1956. These aircraft have not

been included as produced by Communist China in Table 8* and Table 9,** because the fabrication of the aircraft is included under Soviet production.

The USSR will provide the aircraft engines, accessories, electronic gear, armaments, and the like, which are required for both fighter and trainer aircraft.

* P. 13, below.
** P. 14, below.

Table 1

Estimated Production of Aircraft in the Sino-Soviet Bloc, by Number a/
1954 Through the Third Quarter of 1956

Units

Type of Aircraft	1954	1955	1st Quarter of 1956	2d Quarter of 1956	3d Quarter of 1956
Jet bomber					
Heavy	2	25	4	4	6
Medium	160	300	88	91	93
Light	1,300	980	180	170	170
Turboprop bomber					
Heavy	0	6	15	23	28
Jet fighter	4,300	3,800	780	840	1,000
Ground attack	210	60	0	0	0
Transport	1,700	830	260	310	330
Trainer					
Jet	1,200	1,200	240	230	160
Piston	1,100	1,300	360	370	380
Other b/	640	390	110	120	120
Total	11,000	8,900	2,000	2,200	2,300

a. Rounded to reflect the maximum number of significant digits consistent with estimating procedures.
b. Helicopters, gliders, seaplanes, and utility aircraft.

Table 2

Estimated Production of Aircraft in the Sino-Soviet Bloc, by Weight a/
1954 Through the Third Quarter of 1956

	Thousand Pounds of Airframe Weight				
Type of Aircraft	1954	1955	1st Quarter of 1956	2d Quarter of 1956	3d Quarter of 1956
Jet bomber					
Heavy	220	2,800	450	450	670
Medium	8,300	15,000	4,500	4,600	4,700
Light	23,000	18,000	3,300	3,200	3,200
Turboprop bomber					
Heavy	0	540	1,300	2,100	2,500
Jet fighter	30,000	29,000	6,800	7,600	9,100
Ground attack	1,700	500	0	0	0
Transport	9,500	3,600	1,700	2,200	2,400
Trainer					
Jet	8,600	10,000	1,600	1,400	1,000
Piston	1,500	1,900	550	560	570
Other b/	6,300	4,200	1,200	1,200	1,200
Total	90,000	85,000	21,000	23,000	25,000

a. These figures include production of spare parts and are rounded to reflect the maximum number of significant digits consistent with estimating procedures.
b. Helicopters, gliders, seaplanes, and utility aircraft.

Table 3

Estimated Cumulative Production of Selected Aircraft in the USSR a/
Through the Third Quarter of 1956

Units

Model	Type of Aircraft	Production to 1 October 1956
Badger	Jet medium bomber	740
Beagle	Jet light bomber	6,300 b/
Bear	Turboprop heavy bomber	72
Bison	Jet heavy bomber	41
Camel	Jet transport	26
Farmer	Jet fighter	1,200
Flashlight	Jet all-weather interceptor	890
Fresco	Jet fighter	9,700
Horse	Helicopter	43
Hound	Helicopter	470
New fighter	Jet fighter	48

a. Rounded to reflect the maximum number of significant digits consistent with estimating procedures.
b. This total was given incorrectly in the last memorandum of this series, CIA/RR IM-432, Quarterly Estimate of the Production of Aircraft in the Sino-Soviet Bloc, April-June 1956, 20 July 1956, SECRET/CIA INTERNAL USE ONLY. Instead of 4,500 units, the figure should have been 6,200 units.

Table 4

Estimated Production of Aircraft in the USSR, by Number a/
1954 Through the Third Quarter of 1956

Units

Type of Aircraft	1954	1955	1st Quarter of 1956	2d Quarter of 1956	3d Quarter of 1956
Jet bomber					
Heavy	2	25	4	4	6
Medium	160	300	88	91	93
Light	1,300	980	180	170	170
Turboprop Bomber					
Heavy	0	6	15	23	28
Jet fighter	3,800	3,200	670	730	840
Transport					
Jet	0	5	6	6	9
Piston	1,700	810	240	280	300
Trainer					
Jet	1,100	920	140	120	130
Piston	830	830	210	210	210
Other b/	640	390	110	110	110
Total	9,500	7,500	1,700	1,800	1,900

a. Rounded to reflect the maximum number of significant digits consistent with estimating procedures.
b. Helicopters, gliders, and seaplanes.

Table 5

Estimated Production of Aircraft in the USSR, by Weight a/
1954 Through the Third Quarter of 1956

Thousand Pounds of Airframe Weight

Type of Aircraft	1954	1955	1st Quarter of 1956	2d Quarter of 1956	3d Quarter of 1956
Jet bomber					
Heavy	220	2,800	450	450	670
Medium	8,300	15,000	4,500	4,600	4,700
Light	23,000	18,000	3,300	3,200	3,200
Turboprop bomber					
Heavy	0	540	1,300	2,100	2,500
Jet fighter	27,000	26,000	6,100	7,000	8,100
Transport					
Jet	0	310	370	370	560
Piston	9,500	3,300	1,200	1,600	1,700
Trainer					
Jet	8,100	8,100	930	790	830
Piston	920	920	250	250	250
Other b/	6,300	4,200	1,200	1,200	1,200
Total	84,000	79,000	20,000	21,000	24,000

a. These figures include production of spare parts and are rounded to reflect the maximum number of significant digits consistent with estimating procedures.
b. Helicopters, gliders, and seaplanes.

Table 6

US Military Aircraft Acceptances, by Number a/
1954 Through the Third Quarter of 1956

Units

Type of Aircraft	1954	1955	1st Quarter of 1956	2d Quarter of 1956	3d Quarter of 1956 b/
Bomber					
Heavy	28	34	6	12	32
Medium	767	530	128	132	145
Light	106	155	29	16	20
Ground attack	860	631	135	107	121
Fighter	3,518	4,017	600	607	640
Transport	634	536	99	121	81
Trainer	1,602	1,439	286	206	190
Other c/	1,235	701	218	233	278
Total	8,750	8,043	1,501	1,434	1,507

a. The source for these figures is Office of the Assistant Secretary of Defense (Supply and Logistics), Statistics Branch, US Military Aircraft Acceptances, 1953-56, Number and Airframe Weight, September 1956. CONFIDENTIAL.
b. Includes preliminary data for September 1956.
c. Helicopters, flying boats, amphibians, and lighter-than-air.

Table 7

US Military Aircraft Acceptances, by Weight a/
1954 Through the Third Quarter of 1956

Type of Aircraft	Thousand Pounds of Airframe Weight				
	1954	1955	1st Quarter of 1956	2d Quarter of 1956	3d Quarter of 1956 b/
Bomber					
Heavy	3,304	3,853	678	1,355	3,601
Medium	37,296	26,377	5,901	5,863	6,463
Light	1,834	2,724	547	296	375
Ground attack	7,793	6,034	1,369	1,189	1,298
Fighter	35,390	43,161	7,068	7,145	7,261
Transport	30,614	20,697	3,611	4,549	2,937
Trainer	9,633	7,453	1,064	740	763
Other c/	4,831	4,397	1,160	1,441	1,200
Total	130,695	114,696	21,398	22,578	23,898

a. The source for these figures is Office of the Assistant Secretary of Defense (Supply and Logistics), Statistics Branch, US Military Aircraft Acceptances, 1953-56, Number and Airframe Weight, September 1956. CONFIDENTIAL.
b. Includes preliminary data for September 1956.
c. Helicopters, flying boats, amphibians, and lighter-than-air.

Table 8

Estimated Production of Aircraft in the European Satellites and Communist China, by Number 1954 Through the Third Quarter of 1956

Units

Country	Type of Aircraft	1954	1955	1st Quarter of 1956	2d Quarter of 1956	3d Quarter of 1956
Czechoslovakia	Jet fighter	390	240	33	33	90
	Ground attack	210	60	0	0	0
	Jet trainer	90	310	105	105	30
	Piston trainer	190	360	90	90	90
	Transport	0	18	12	19	20
	Other	0	0	1	3	6
Total		880	990	240	250	240
Poland	Jet fighter	150	310	79	79	79
	Piston trainer	60	0	0	0	0
	Light helicopter	0	0	0	2	2
Total		210	310	79	81	81
Bulgaria	Piston trainer	0	0	0	0	0
Rumania	Piston trainer	24	24	6	6	6
Hungary	Piston trainer	24	24	6	6	6
East Germany	Transport	0	0	0	1	1
Communist China b/	Piston trainer	0	23	51	61	70
Grand total		1,140	1,380	380	410	400

a. Rounded to reflect the maximum number of significant digits consistent with estimating procedures.
b. See discussion of Chinese Communist aircraft production under 3, p. 3, above.

[redacted]

Table 9

Estimated Production of Aircraft in the European Satellites and Communist China, by Weight a/
1954 Through the Third Quarter of 1956

Thousand Pounds of Airframe Weight

Country	Type of Aircraft	1954	1955	1st Quarter of 1956	2d Quarter of 1956	3d Quarter of 1956
Czechoslovakia	Jet fighter	2,300	1,400	200	200	530
	Ground attack	1,700	500	0	0	0
	Jet trainer	550	1,900	650	650	180
	Piston trainer	450	960	240	240	240
	Transport	0	28	36	47	66
	Other	0	0	1	4	8
Total		5,100	4,800	1,100	1,100	1,000
Poland	Jet fighter	860	1,800	470	470	470
	Piston trainer	61	0	0	0	0
	Light helicopter	0	0	0	6	6
Total		920	1,800	470	470	470
Bulgaria	Piston trainer	0	0	0	0	0
Rumania	Piston trainer	22	22	6	6	6
Hungary	Piston trainer	17	17	6	6	6
East Germany	Transport	0	0	0	19	19
Communist China b/		0	23	52	62	71
Grand total		6,000	6,700	1,600	1,700	1,600

a. These figures include production of spare parts and are rounded to reflect the maximum number of significant digits consistent with estimating procedures.

b. See discussion of Chinese Communist aircraft production under 3, p. 3, above.

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Figure 1.

US[a] and USSR[b]

PRODUCTION OF MILITARY AIRCRAFT,[c] BY NUMBER

1954 Through the Third Quarter of 1956

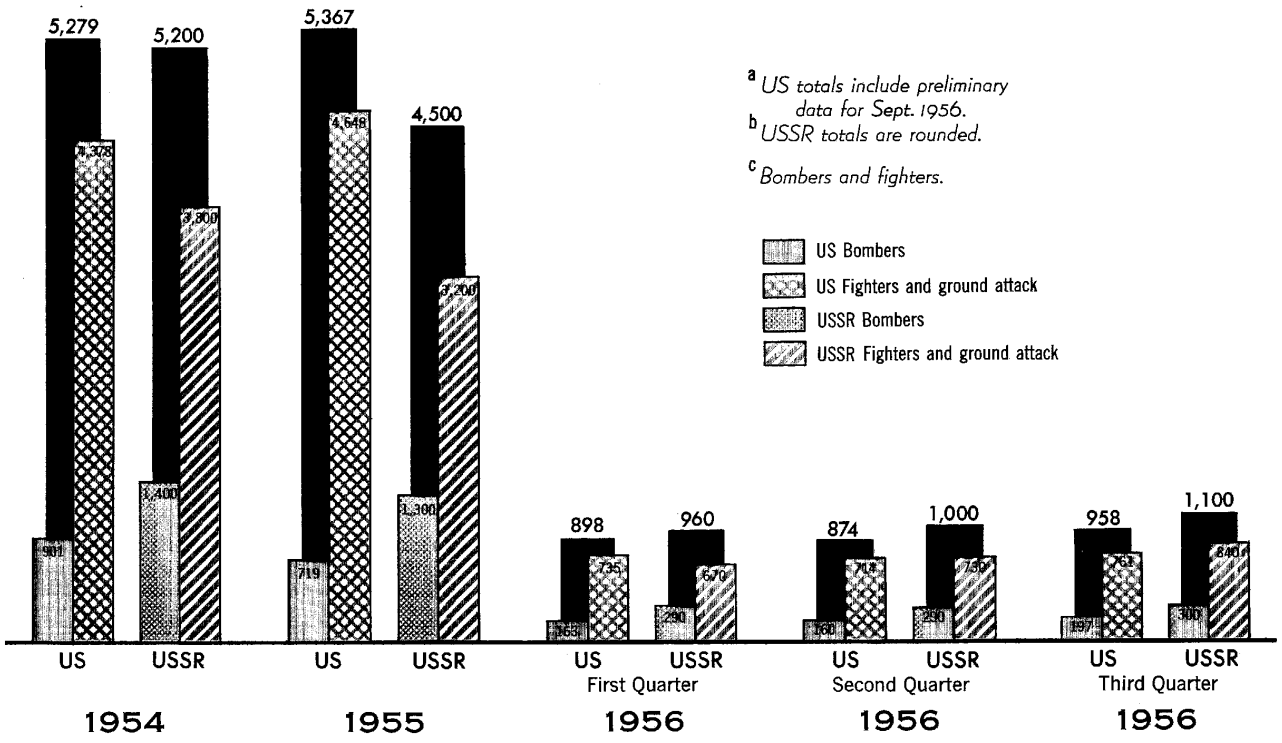

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Figure 2.

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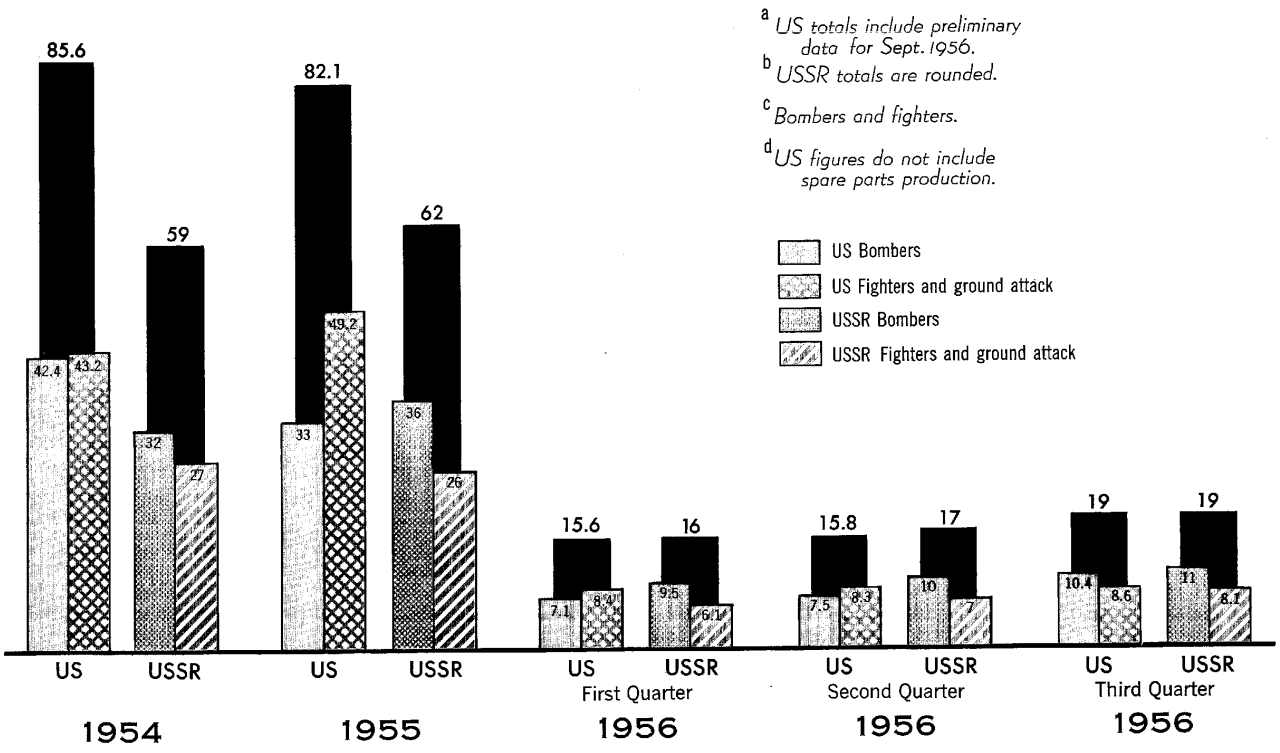
US[a] and USSR[b]

PRODUCTION OF MILITARY AIRCRAFT,[c] BY WEIGHT[d]

1954 Through the Third Quarter of 1956

(Million pounds of airframe weight)



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